

What is claimed is:

1. A head end controller that controls a plurality of service units in a telecommunications system with a multi-carrier transmission scheme, the head end controller comprising:
  - a logic circuit that generates control messages for the plurality of service units, wherein each service unit is assigned to at least one subband of a transmission bandwidth and wherein each subband includes a number of payload channels and at least one control channel; and
  - a control channel transceiver that is adapted to be coupled to a distribution network of the transmission system, wherein the control channel transceiver broadcasts control messages to the plurality of service units over the control channels in the plurality of subbands.
2. The head end controller of claim 1, wherein the control messages include a personal identification number that identifies at least one service unit.
3. The head end controller of claim 1, wherein the control transceiver is adapted to be coupled to a hybrid fiber/coax network.
4. The head end controller of claim 1, wherein the logic circuit is adapted to detect collisions on the control channels of the plurality of subbands and is further adapted to instruct the service units to retransmit upstream messages on the control channel when a collision is detected.
5. The head end controller of claim 1, and further comprising a modem, coupled between the control channel transceiver and the distribution network, that is adapted to transmit the control signals to the service units over the control channels.